

## **ABSTRACT**

### **DEVICE FOR NON-DISSIPATIVE MEASUREMENT OF THE CURRENT IN AN INDUCTOR**

The invention relates to a device for measuring current in an inductor (12), which device is intended to be connected in parallel with said inductor, comprising two terminals A and B. The device comprises:

- a network (10) in parallel with the inductor and connected to the terminals A and B having a resistor R2 in series with a resistor R1 in parallel with a capacitor C1;
- a voltage offset circuit (16) having a DC voltage generator E connected in parallel with an offset resistor ( $R_{\text{offset}}$ ) in series with two resistors in parallel R3 and R4, the positive pole of this voltage source being connected to terminal B of the inductor;
- a temperature compensation circuit (20) comprising a current source controlled as a function of the temperature, one of the two terminals of the current source being connected to the negative pole of the generator E, the other terminal of the current source being connected to different points of the measurement device according to the direction of variation of the current of the source as a function of the temperature.

The measurement of voltage  $V_{\text{mes}}$ , the image of the current  $I$  in the inductor 12, is performed between the common point between the resistors R1, R2 of the network and the common point between the offset resistor and the two resistors R3 and R4.

Application: measurements of currents in the inductors of switched mode power supplies, voltage step-up, step-down converters.

Figure 4a